

and the roller being fabricated from a polymer, the polymer having a burn rate of less than 4.0 inches per minute, a compressibility strength of at least 200 psi, impact strength of at least 0.5 (ft.lbs.)/inch, flexural strength of at least 20 psi;

- b. a shaft in the form of an elongate cylinder having a diameter sized to rotatably fit within the central aperture of the roller, the shaft further having [a] means for retention located upon the shaft ends;
- c. an elongate "U" shaped roller rack, the roller rack sized to extend the length of the roller and having a pair of upwardly extending ends located adjacent the ends of the roller, each end having an aperture sized to receive the respective shaft end and locate the shaft in a fixed location the rack being joined to an aircraft.
2. The aircraft roller system as described in claim 1 wherein the polymer forming the roller is a polymer select from the group consisting of polysulfone, polyetherimide, polyetherketone, polyphenylene sulfide and polyvynilidene fluoride.
3. The aircraft roller system as described in claim 1 wherein the polymer forming the roller is an acetyl copolymer.

4. The aircraft roller system as described in claim 1 further comprising a pair of bushings having central openings fitted within the central aperture of the roller and attached to the roller sized to rotatably accept the shaft within their respective central openings.
5. The aircraft roller system as described in claim 1 further comprising a pair of bearings having central openings fitted within the central aperture of the roller and attached to the roller sized to rotatably accept the shaft within their respective central openings
- A 1  
cont*
6. An aircraft roller comprising:  
a homogenous roller having:
- a. an outer housing constructed from a polymer selected from the group consisting of polysulfone, polyetherimide, polyetherketone, polyphenylene sulfide and polyvinylidene fluoride, the polymer having a burn rate of less than 4.0 inches per minute, a compressibility strength of at least 200 psi, impact strength of at least 0.5 (ft.lbs.)/inch, flexural strength of at least 20 psi;
  - b. the outer housing further having a central aperture disposed longitudinally therethrough; and
  - c. a bearing located surrounding the central aperture and attached to the outer housing;
- a roller rack joined to the roller; and

an aircraft operably joined to the roller rack.

7. [A monolithic] Aircraft roller comprising:  
a cylindric roller body, the roller body having a length and a diameter, the roller  
also having an aperture extending along and through the center of the  
roller, the roller fabricated from a polymeric material, the polymer having a  
burn rate of less than 4.0 inches per minute; and  
a cargo aircraft joined to the roller.
8. The [monolithic] aircraft roller of claim 7 further comprising a pair of bushings  
fitted within aperture of the roller extending inwardly into the aperture of the  
roller.
9. The [monolithic] aircraft roller of claim 8 wherein the pair of bushing is merged  
into a single bushing extending through the roller.
10. The [monolithic] aircraft roller of claim 7 further comprising a pair of bearings  
fitted within aperture of the roller extending inwardly into the aperture of the  
roller.
11. The [monolithic] aircraft roller of claim 7 wherein the polymeric material of the  
roller is selected from the group consisting of polysulfone, polyetherimide,  
polyetherketone, polyphenylene sulfide and polyvinilidene fluoride.